What Is Claimed Is:

1. A method for operating a position-measuring device (10) which has a signal-generating unit (11) for generating positional data and which is connected to a sequential electronics (100) via a communication unit (12), the transmission of data between the signal-generating unit (11) and the communication unit (12) taking place via an internal interface unit (13), while measurement-data request instructions (RQ), which are transmitted from the sequential electronics (100) to the position-measuring device (10), are transmitted to the signal-generating unit, bypassing the internal interface unit (12).

2. The method as recited in Claim 1,
wherein the measurement-data request instructions (RQ) are transmitted to the signal-generating unit (11) via a separate data channel (14).

3. The method as recited in Claim 2,
wherein the measurement-data request instructions (RQ) are transmitted to the signal-generating unit (11) via a separate connecting line.

4. The method as recited in Claim 1,
wherein the measurement-data request instructions (RQ) in the data stream transmitted by the sequential electronics (100) are identified in the communication unit (12).

5. The method as recited in Claim 4,
wherein the identified measurement-data request instructions (RQ) are separated from the data stream which is sent from the communication unit (12) to the internal interface unit (13).

6. The method as recited in Claim 5,
wherein the separated measurement-data request instructions

(RQ) are conditioned in such a way that transmission to the signal-generating unit (11) takes place in a manner as free of delay as possible.

7. The method as recited in Claim 1, wherein in addition to the positional data, further measurement data derived from the positional data are also requested from the position-measuring device (10) via the measurement-data request instructions (RQ).

8. A position-measuring device, comprising

- a signal-generating unit (11) for generating measurement data,
- a communication unit (12) via which the position-measuring device (10) is connected to a sequential electronics (100),
- an internal interface unit (13) via which data is transmitted between the signal-generating unit (11) and the communication unit (12), and
- redirection means, via which measurement-data request instructions (RQ), which are transmitted from the sequential electronics (100) to the position-measuring device (10), are able to be transmitted to the signal-generating unit (11), bypassing the internal interface unit (13).

9. The position-measuring device as recited in Claim 8, wherein the redirection means include a separate data channel (14) between the communication unit (12) and the signal-generating unit (11).

10. The position-measuring device as recited in Claim 9, wherein the data channel (14) takes the form of a separate connecting line.

11. The position-measuring device as recited in Claim 8, wherein the redirection means also include a unit (16) via which measurement-data request instructions (RQ) are identified in the data stream transmitted from the sequential electronics (100), and the identified measurement-data request instructions (RQ) are separated from this data stream.

12. The position-measuring device as recited in Claim 8, wherein the communication unit (12) is designed in such a way that a bidirectional, serial communication is possible between the position-measuring device (10) and the sequential electronics (100).

13. The position-measuring device as recited in Claim 8, wherein further signal-processing means (15), via which it is possible to process the generated positional data, are disposed between the signal-generating unit (11) and the internal interface unit (13).

14. The position-measuring device as recited in Claim 8, wherein the data transmission from the internal interface unit (13) to the signal-generating unit (11) takes place via an addressing channel (21), and the data transmission from the signal-generating unit (11) to the internal interface unit (13) takes place via a data-transmission channel (22).

15. The position-measuring device as recited in Claim 14, wherein the addressing channel (21) is made up of an address clockline (ADR_CLK) and n address lines (AS0 - AS(n-1)), and the data are transmitted synchronously with respect to the clock signal on the address clockline (ADR_CLK) in n-bit wide serial data packets.

16. The position-measuring device as recited in Claim 14, wherein the data-transmission channel (22) is made up of a

data clockline (DATA_CLK) and m data lines (D0 - D(m-1)), and the data is transmitted synchronously with respect to the clock signal on the data clockline (DATA_CLK) in m-bit wide serial data packets.

17. The position-measuring device as recited in Claim 16, wherein the clock signal on the data clockline (DATA_CLK) is made up of the clock signal on the address clockline (ADR_CLK), delayed by the signal propagation time in the signal-generating unit (11).